

Claims

1. Use of an inert material with a specific surface of between $10 \text{ m}^2/\text{l}$ and $10,000 \text{ m}^2/\text{l}$, with a porosity of between 10% and 80%, with pores of which at least 50% have a pore size of between $0.1 \text{ }\mu\text{m}$ and $1000 \text{ }\mu\text{m}$, with grains of which more than 50% have a grain size of between 0.1 mm and 50 mm , and with a water absorption capacity of at least 10% of its own weight, for reducing the salt content in aqueous solutions.
2. Use according to claim 1, whereby the specific surface of the material is between $250 \text{ m}^2/\text{l}$ and $2500 \text{ m}^2/\text{l}$.
3. Use according to claim 1 or 2, whereby at least 80% of the pores have a pore size of between $0.5 \text{ }\mu\text{m}$ and $100 \text{ }\mu\text{m}$.
4. Use according to one or more of the claims 1 to 3, whereby at least 90% of the grains have a grain size of between 0.1 mm and 50 mm .
5. Use according to one or more of the claims 1 to 4, whereby the open porosity of the material is between 40% and 80%.
6. Use according to one or more of the claims 1 to 5, whereby the inert material is a non-metallic inorganic material.
7. Use according to claim 6, whereby the inert material is a ceramic material.

8. Use according to one or more of the claims 1 to 7, whereby the volume increase of the inert material in the presence of water is less than 10%.
9. Use according to one or more of the claims 1 to 8, whereby the inert material has grains with an irregular form.
10. Method for reducing the salt content in aqueous solutions, comprising the steps
- (a) bringing the saline aqueous solution into contact with the inert material defined in one or more of the claims 1 to 9;
 - (b) bringing the inert material impregnated with water into contact with air at a temperature of between 10°C and 80°C;
 - (c) transporting the enriched air from step (b) into a condensation chamber, whereby the air is cooled to between 5°C and 40°C, but at least by 5°C;
 - (d) condensing, in the condensation chamber, of the water absorbed in the air; and
 - (e) collecting the condensed water.
11. Method according to claim 10, whereby the inert material impregnated with water has air passed through it in step (b) at a flow rate of between 0.1 m/s and 100 m/s.
12. Method according to claim 11, whereby the flow rate of the air is between 2 m/s and 50 m/s.
13. Method according to one or more of the claims 10 to 12, whereby the temperature of the air in step (b) is between 30°C and 60°C.

14. Apparatus for the reduction of the salt content in aqueous solutions, comprising a container (4) which is suitable for accommodating the inert material defined in one or more of the claims 1 to 9, whereby the container (4) is provided with an opening for feeding in air, a device for feeding the aqueous solution to the porous material and with an opening for removing the air (5), and whereby the opening for removing the air is linked to a condensation chamber (6) equipped with apparatus for condensing and collecting the water (7).

15. Apparatus according to claim 14, whereby a blower (1) is provided for the air supply.

16. Apparatus according to claim 14 or 15, whereby for the feeding of the aqueous solution, a supply container (2) is provided.